



Designation: D1676 – 24

Standard Test Methods for Film-Insulated Magnet Wire¹

This standard is issued under the fixed designation D1676; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reappraisal. A superscript epsilon (ε) indicates an editorial change since the last revision or reappraisal.

1. Scope*

1.1 These test methods cover procedures for testing film-insulated magnet wire that is used in electrical apparatus. These test methods are intended primarily for the evaluation of the electrical insulating materials used. The intent is that these test methods be used, except where modified, by individual specifications for particular applications.

1.2 These test methods present different procedures for evaluating given properties of round, rectangular or square, copper or aluminum film-insulated magnet wire.

1.3 The values stated in inch-pound units are the standard. The SI units in parentheses are provided for information only.

1.4 The test methods appear in the following sections:

	Sections
Bond Strength	4 – 12
Burnout (AC Overload Resistance)	13 – 21
Chemical Resistance	22 – 28
Coefficient of Friction	29 – 37
Continuity, DC High Voltage	38 – 45
Continuity, DC Low Voltage	46 – 53
Completeness of Cure	54 – 60
Cut-Through Temperature (Thermoplastic Flow)	61 – 68
Dielectric Breakdown AC Voltage	69 – 75
Dielectric Breakdown AC Voltage after Bending	76 – 82
Dielectric Breakdown AC Voltage at Elevated Temperatures	83 – 89
Dielectric Breakdown AC Voltage after Conditioning in Refrigerant Atmosphere	90 – 99
Dimensional Measurement	100 – 106
Dissipation Factor Measurement	107 – 114
Electrical Resistance	115 – 121
Elongation	122 – 129
Extractables, Refrigerant	130 – 140
Film Adherence and Flexibility	141 – 148
Formability:	
a) Elastic Ratio	152
b) Low Stress Elongation	153
c) Spring Back	154-155
Heat Shock	156 – 162
Oiliness	163 – 169
Scrape Resistance, Unidirectional	170 – 177
Solderability	178 – 185
Resistance to Insulating Liquids and Hydrolytic Stability	186 – 195

¹ These test methods are under the jurisdiction of ASTM Committee D09 on Electrical and Electronic Insulating Materials and are the direct responsibility of Subcommittee D09.12 on Electrical Tests.

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1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.* Specific hazard statements are given in 9.5, 19.1, 19.3, 19.8, 52.1, 58, 59.1, 74.1, 112.1, 135.4, and 182.3.

NOTE 1—This test method is related to IEC 60851. Since both methods contain multiple test procedures, many procedures are technically equivalent while others differ significantly.

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:

- A228/A228M Specification for Steel Wire, Music Spring Quality
- B3 Specification for Soft or Annealed Copper Wire
- B43 Specification for Seamless Red Brass Pipe, Standard Sizes
- B193 Test Method for Resistivity of Electrical Conductor Materials
- B279 Test Method for Stiffness of Bare Soft Square and Rectangular Copper and Aluminum Wire for Magnet Wire Fabrication
- B324 Specification for Aluminum Rectangular and Square Wire for Electrical Purposes
- B609/B609M Specification for Aluminum 1350 Round Wire, Annealed and Intermediate Tempers, for Electrical Purposes
- D149 Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies
- D150 Test Methods for AC Loss Characteristics and Permittivity (Dielectric Constant) of Solid Electrical Insulation
- D374/D374M Test Methods for Thickness of Solid Electrical Insulation
- D877/D877M Test Method for Dielectric Breakdown Voltage of Insulating Liquids Using Disk Electrodes
- D1533 Test Method for Water in Insulating Liquids by

*A Summary of Changes section appears at the end of this standard